Fig. 1

WAP hotel reservation - Bluetooth check in & check out
Sequence diagram
Searching and booking
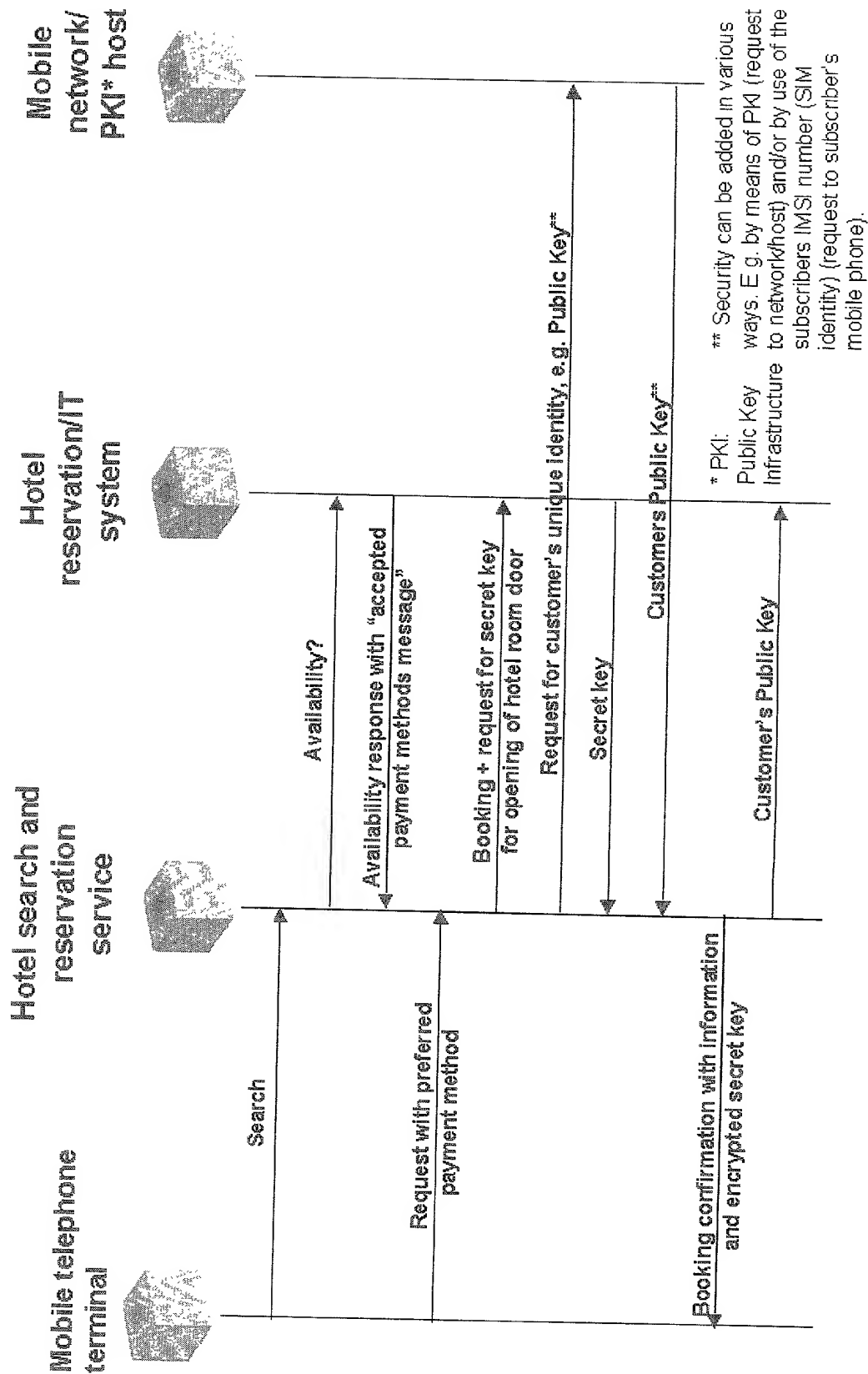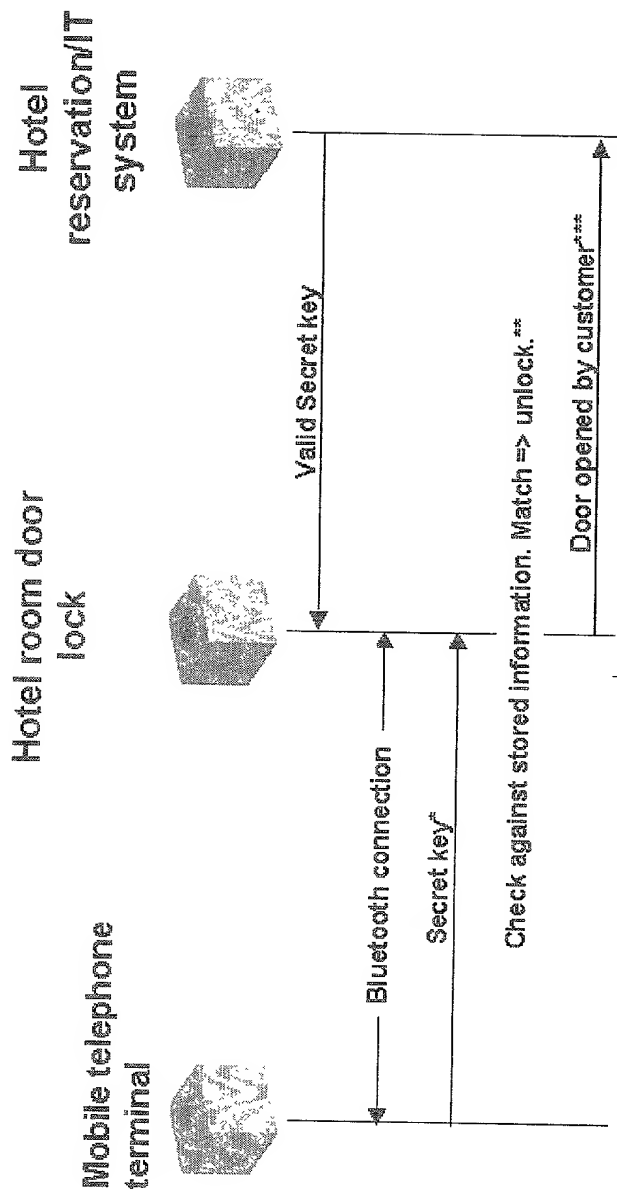
Mobile telephone terminal

Hotel search and reservation service

Hotel reservation/IT system

Mobile network/ PKI* host

Search

Request with preferred payment method

Availability?

Availability response with "accepted payment methods message"

Booking + request for secret key for opening of hotel room door

Request for customer's unique identity, e.g. Public Key**

Secret key

Customers Public Key**

Customer's Public Key

Booking confirmation with information and encrypted secret key

* PKI: Public Key Infrastructure

** Security can be added in various ways. E.g. by means of PKI (request to network/host) and/or by use of the subscribers IMSI number (SIM identity) (request to subscriber's mobile phone).

Fig. 2

WAP hotel reservation - Bluetooth check in & check out
Sequence diagram
Arrival/Check in

Mobile telephone terminal

Hotel room door lock

Hotel reservation/IT system

Bluetooth connection

Secret key*

Check against stored information. Match => unlock.**

Valid Secret key

Door opened by customer***

* If PKI has been used as a means of security the secret key is embedded in a Private Key from the mobile phone.

** The checking may be done in the lock or by checking against the hotel IT system

*** The first time during each stay that the door is opened, this initiates a check in registration in the hotel IT system.

Fig. 3

WAP hotel reservation - Bluetooth check in & check out
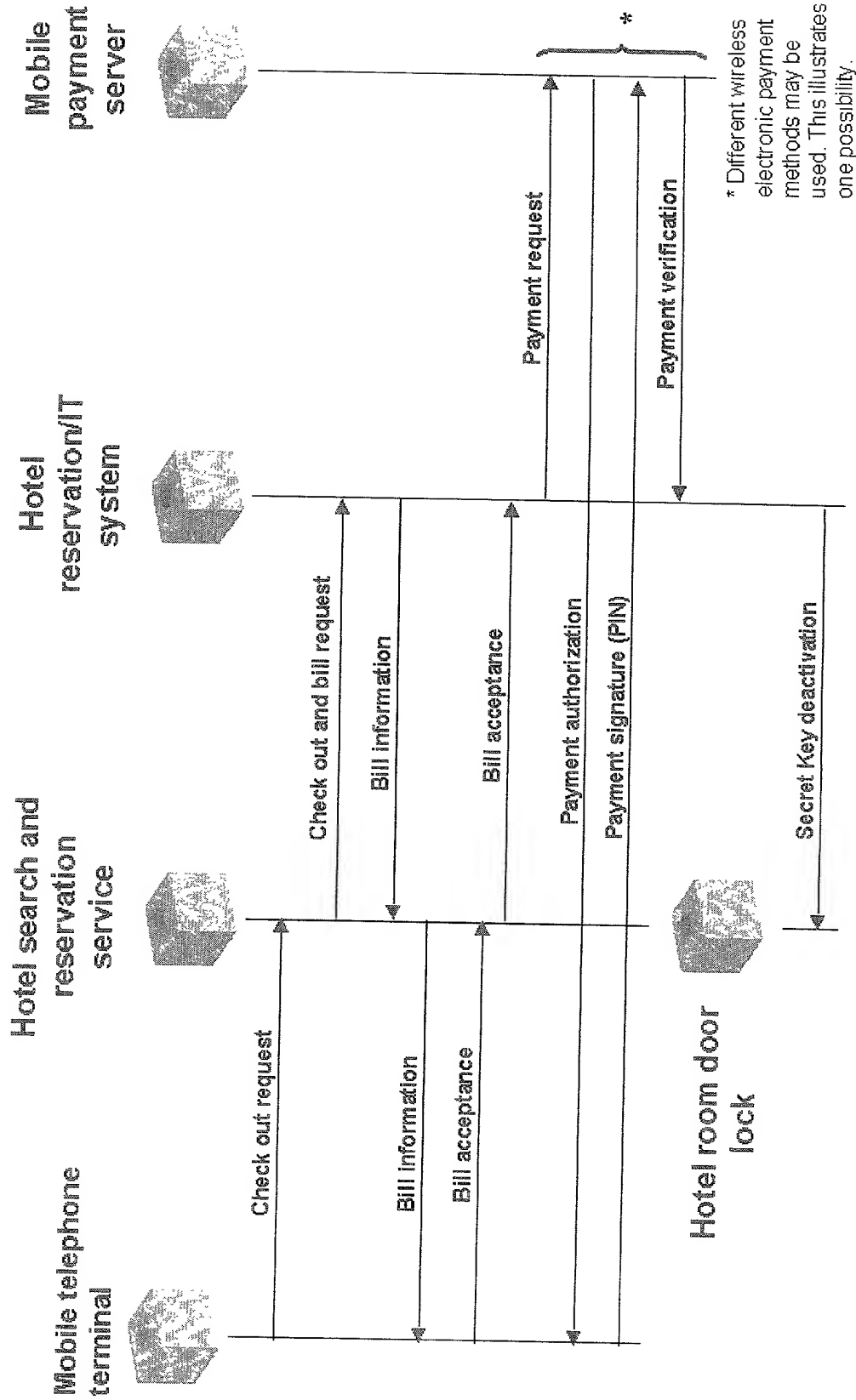Sequence diagram
Departure - Check out
and payment

Mobile telephone terminal	Hotel search and reservation service	Hotel reservation/IT system	Mobile payment server

Check out request

Check out and bill request

Bill information

Bill information

Bill acceptance

Bill acceptance

Payment authorization

Payment request

Payment signature (PIN)

Payment verification

Hotel room door lock

Secret Key deactivation

* Different wireless electronic payment methods may be used. This illustrates one possibility.

Fig. 4

WAP hotel reservation - Bluetooth check in & check out
Sequence diagram
Departure - Check out

Mobile telephone terminal

Hotel main entrance

Hotel reservation/IT system

Mobile payment server

Bluetooth connection

Secret key*

Secret key*

Check against stored information. Customer identified.
Exit registered.
· Payment registered => check out registered.
· Payment not registered => After time has passed end of
room reservation, the below is initiated.
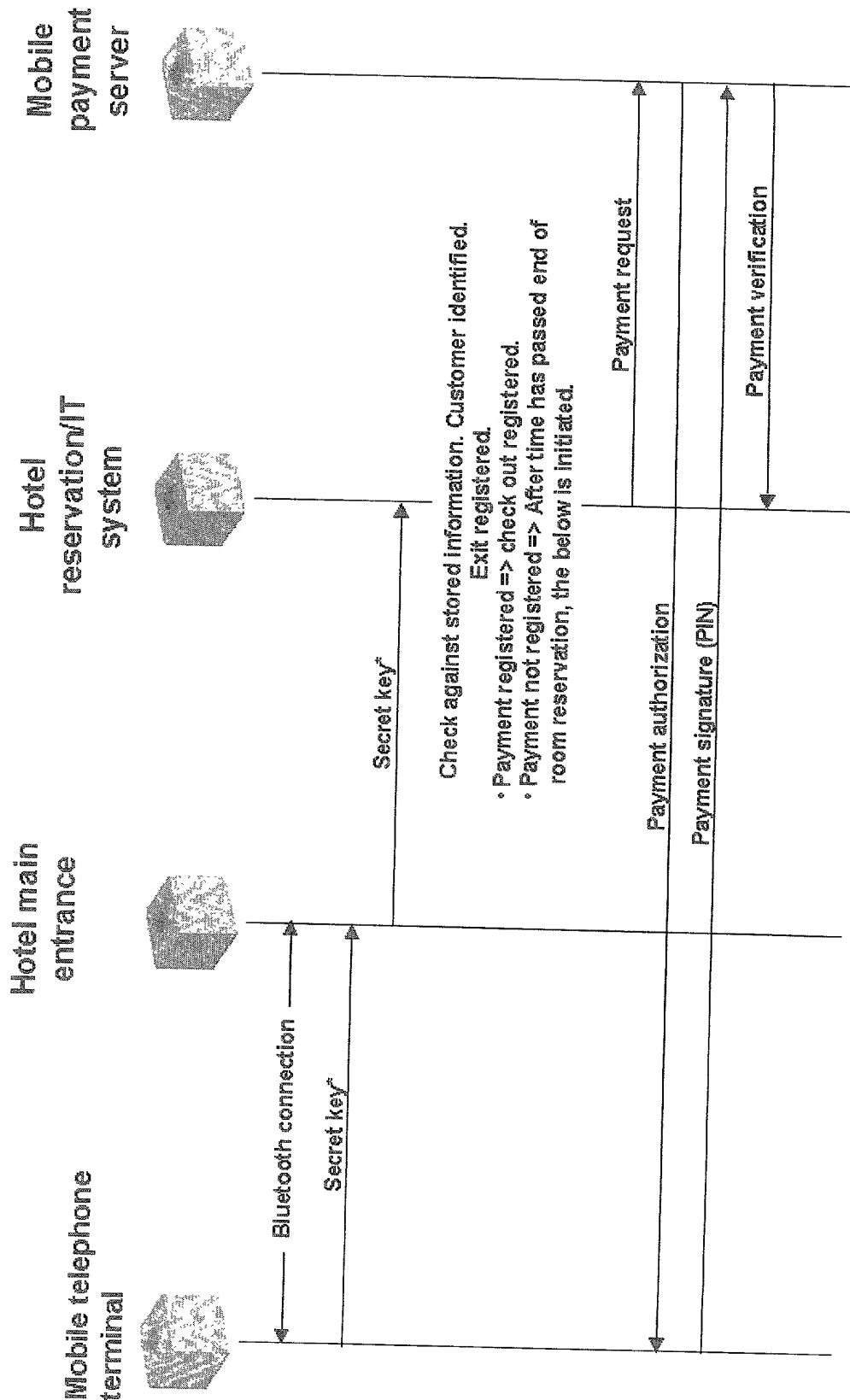
Payment request

Payment verification

Payment authorization

Payment signature (PIN)

Fig. 5

WAP hotel reservation - Bluetooth check-in and check-out

Check-in and door lock activation

Hotel
reservation/IT
system

Hotel lock activated with the travelers
Bluetooth/terminal identity automatically at the
appropriate time in accordance with booking

Hotel

Upon arrival the traveler walks straight to
the appointed room as confirmed through
the WAP reservation service. The door
recognizes the travelers Bluetooth/terminal
identity and opens automatically as the
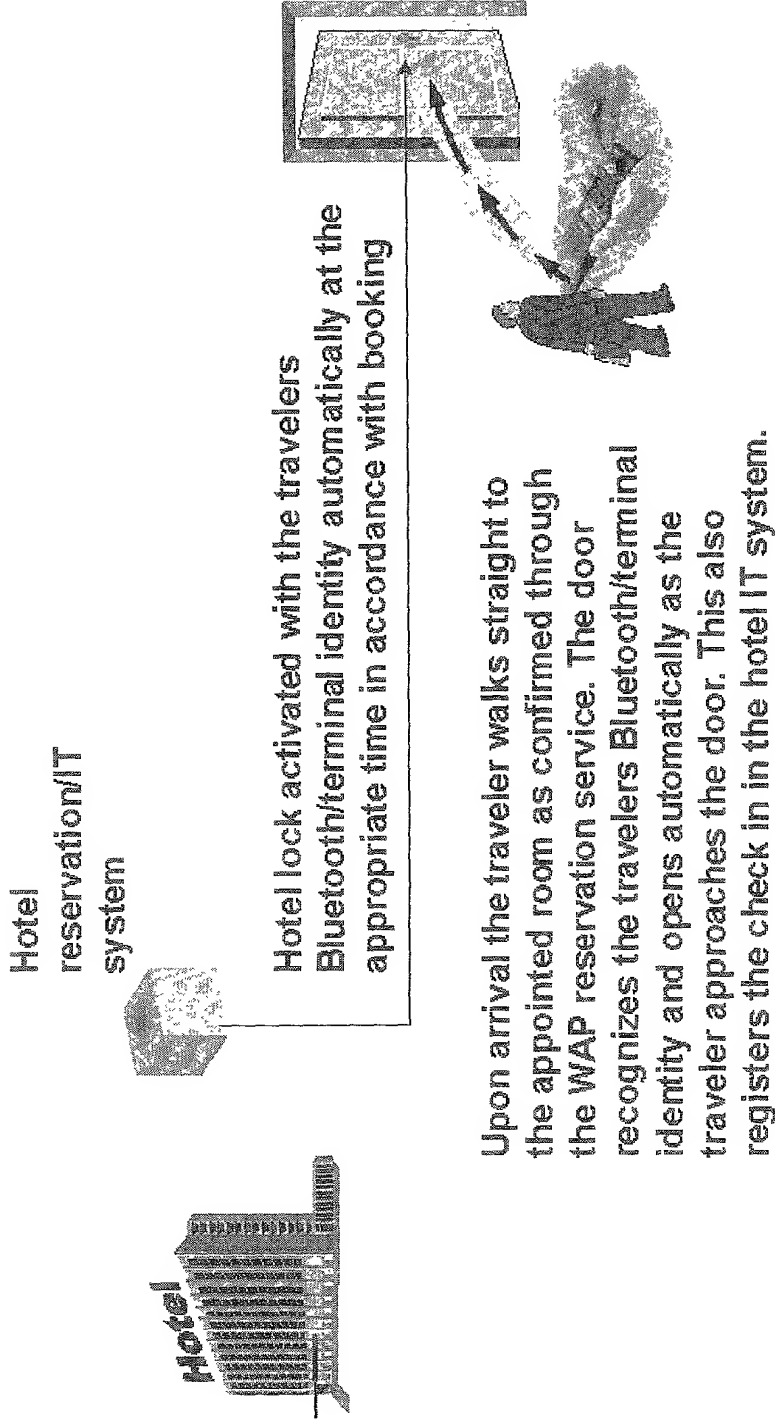traveler approaches the door. This also
registers the check in in the hotel IT system.

Fig. 6

WAP hotel reservation - Bluetooth check-in and check-out
Check-out and door lock deactivation

Hotel
reservation/IT
system

Hotel lock deactivated with the travelers
Bluetooth/terminal identity automatically at the
appropriate time in accordance with booking

Upon departure the traveler walks straight out of the hotel.
The traveler has the choice to pay by means of his/her
WAP terminal before leaving or to do the same while
travelling away from the hotel. The hotel entrance door
recognizes the travelers Bluetooth/terminal identity and
registers that he/she is leaving. This also registers the
check out in the hotel IT system if the time for leaving is in
accordance with the booking. If the traveler is leaving
ahead of time compared to the booking, check out can be
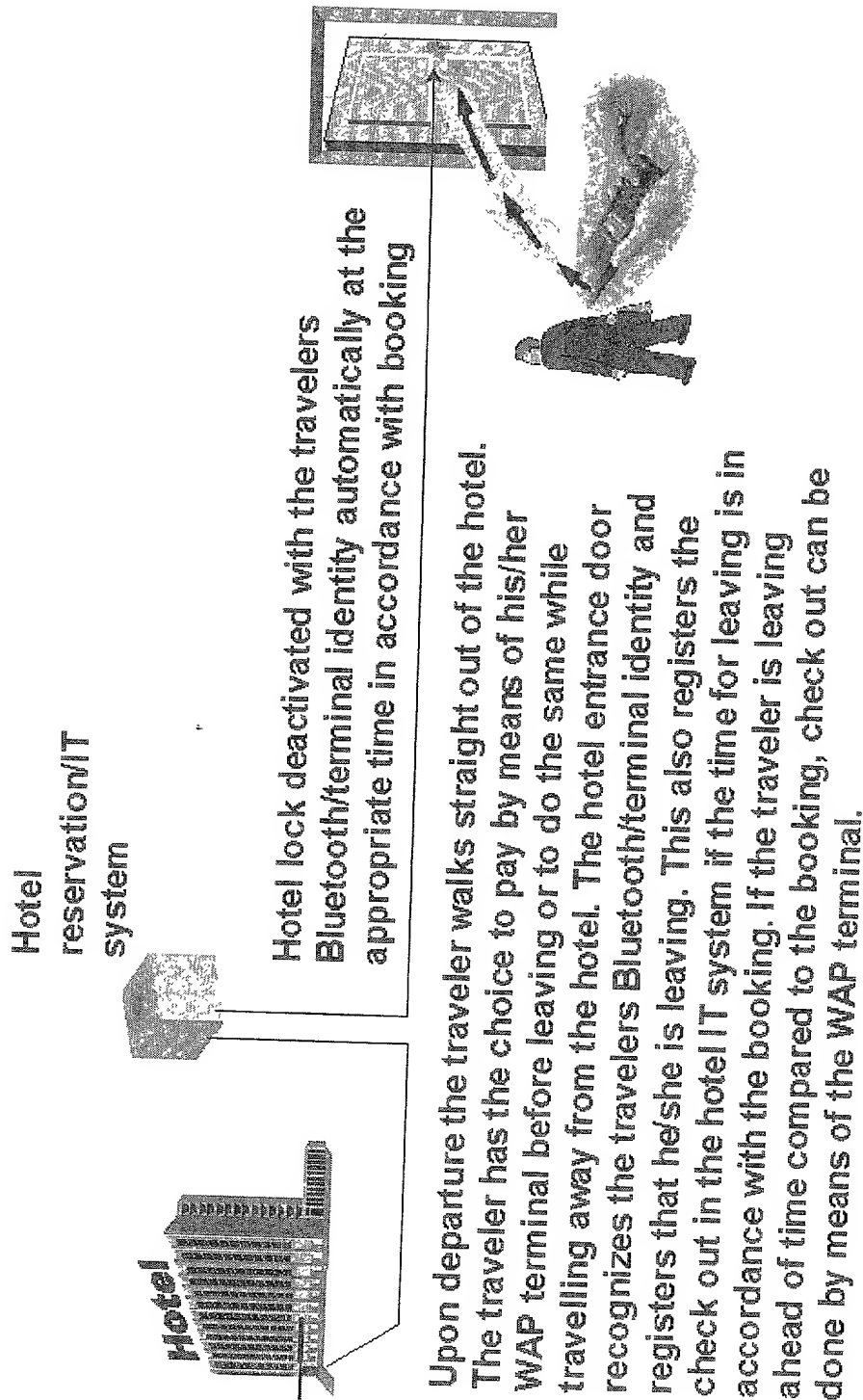done by means of the WAP terminal.

Fig. 7

WAP hotel reservation - Bluetooth check in & check out
Search and booking

Search

Request

UMTS

GSM

TDMA

CDMA

Bearer

Hotel availability
& Info

Confirmation
with room #

Hotel/
Hotel Search
Service Provider

Confirmation
with Bluetooth/
terminal identity

Hotel
reservation/IT
system

Fig. 8